

3rd Assignment - till 25. 10. 23:59

1. Find the limit $\lim_{n \rightarrow \infty} \frac{n^2 - n^4 - 4}{n^5 - 2n^6 + n - \frac{3}{n}}$
2. Find the limit $\lim_{n \rightarrow \infty} \frac{\sqrt{2n-3} - \sqrt{2n+3}}{\sqrt{n+4} - \sqrt{n+2}}$
3. Find infimum, minimum, maximum and supremum of the following sets:
 - (a) $\{\arcsin x, x \in \mathbb{Q}\}$
 - (b) $\{\tan((2n+1)\frac{\pi}{4}), n \in \mathbb{N}\}$
 - (c) $(\mathbb{R} \setminus \mathbb{Q}) \cap [-42, 13]$
 - (d) $\left\{\frac{(-1)^n}{n^2} + 3(-1)^{3n}, n \in \mathbb{N}\right\}$
 - (e) $\left\{\frac{4x^2}{|x|+1} > 2, x \in \mathbb{R}\right\}$